KINGDOM OF THAILAND

The Study Project for Health Hazards Evaluation in Asbestos-Processing Industries In Thailand

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Background

Since asbestos is classified as a confirmed human carcinogen, the use of this hazardous substance has tended to decrease. In Thailand, the import and possession of asbestos for industrial purpose has become more strictly in control. However, there were still a significant number of industries dealing with asbestos. Especially, some small and medium industries those obviously presented with harmful work environment. At the time, health hazard evaluation on this issue needed to be determined in order to recommend practical preventive measure. This study project was conducted as a major activity of the National Institute for the Improvement of Working Conditions and Environment (NICE) in 1999 through 2001. The objectives are:

1. to determine average asbestos concentration levels in various work processes comparing to the standards;
2. to identify other occupational safety and health issues those were problematic in such industries;
3. to recommend appropriate preventive and control measures for their working environment improvement. The outcomes from this study will be used as guideline for further OSH plan and activities in Thailand.

Methods

The survey and environment assessment were conducted in 11 industries of various processes. The processes were categorized into 4 groups, which are; brake pad, clutch, roof-tile, cement duct and other products. All involved in the use of asbestos in friable form. Air samplings were carried out at the workers exposed to asbestos.

The measurement samples were totally 107. The laboratory analysis of environmental samples was run using the computerized asbestos analytical system (equipped with a phase-contrast microscope and software for asbestos counting and sizing).

Results

In overall, the airborne asbestos concentrations ranged from 0.01 to 43.31 fibers/cc. (average of 5.45 fibers/cc.). Of these 107 measurements, 39 samples (36.45 %) exceeded the TLV (5 fibers/cc.) issued by the Thai government. According to ACGIH TLV and NIOSH recommended PEL (0.1 fiber/cc.), however, as many as 103 samples (96.26 %) exceeded such standards. The mean concentrations of asbestos in brake industries, clutch industries, and cement products industries, were 6.93, 1.45, and 0.81 fiber/cc., respectively. The possible affecting factors were discussed, while the practical preventive and control measures were recommended to each industry. These measures emphasized on improvement of working conditions and environment to minimize asbestos contamination. Especially, the application of engineering controls such as local exhaust ventilation systems along with the proper personal protection.

Conclusions

Workers in asbestos-processing industries in Thailand are still in hazardous working conditions and environment. Proper preventive measures need to be employed in each particular workplace while the environmental monitoring should also be continued. The permissible exposure level for asbestos under the Thai regulation should also be revised accordingly to the recommended international standards.

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